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(54) **ELECTROPHORETIC DISPLAYS USING NANOPARTICLES**

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- (52) **U.S. Cl.** **359/296; 345/107**
- (58) **Field of Search** 345/107, 86; 359/296, 359/529, 530, 536, 538, 539, 541; 349/86, 89

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ABSTRACT

An electrophoretic display comprises a fluid and a plurality of nanoparticles having diameters substantially less the wavelengths of visible light such that, when the nanoparticles are in a dispersed state and uniformly dispersed throughout the fluid, the fluid presents a first optical characteristic, but when the nanoparticles are in an aggregated state in which they are gathered into aggregates substantially larger than the individual nanoparticles, the fluid presents a second optical characteristic different from the first optical characteristic. The electrophoretic display further comprises at least one electrode arranged to apply an electric field to the nanoparticle-containing fluid and thereby move the nanoparticles between their dispersed and aggregated states.

28 Claims, 11 Drawing Sheets

